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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No. 004688.P021 Total Pages 2

First Named Inventor or Application Identifier KIKINIS, Dan

Express Mail Label No. EL627467518US

ADDRESS TO: **Commissioner for Patents**
Box Patent Application
Washington, D. C. 20231

APPLICATION ELEMENTS
See MPEP chapter 600 concerning utility patent application contents.

1. X Fee Transmittal Form
(Submit an original, and a duplicate for fee processing)

2. X Specification (Total Pages 23)
(preferred arrangement set forth below)
- Descriptive Title of the Invention
- Cross References to Related Applications
- Statement Regarding Fed sponsored R & D
- Reference to Microfiche Appendix
- Background of the Invention
- Brief Summary of the Invention
- Brief Description of the Drawings (if filed)
- Detailed Description
- Claims
- Abstract of the Disclosure

3. X Drawings(s) (35 USC 113) (Total Sheets 5)

4. X Oath or Declaration (Total Pages 5) (unsigned)
   a. ___ Newly Executed (Original or Copy)
   b. ___ Copy from a Prior Application (37 CFR 1.63(d))
   (for Continuation/Divisional with Box 17 completed) **(Note Box 5 below)**
   i. ___ DELETIONS OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).

5. _ Incorporation By Reference (useable if Box 4b is checked)
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

6. _ Microfiche Computer Program (Appendix)

7. _____ Nucleotide and/or Amino Acid Sequence Submission(if applicable, all necessary)
   a. ___ Computer Readable Copy
   b. ___ Paper Copy (identical to computer copy)
   c. ___ Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

8. __ Assignment Papers (cover sheet & documents(s))
9. __ a. 37 CFR 3.73(b) Statement (where there is an assignee)
   __ b. Power of Attorney
10. __ English Translation Document (if applicable)
11. __ a. Information Disclosure Statement (IDS)/PTO-1449
   __ b. Copies of IDS Citations
12. __ Preliminary Amendment
13. X Return Receipt Postcard (MPEP 503) (Should be specifically itemized)
14. __ a. Small Entity Statement(s)
   b. Statement filed in prior application, Status still proper and desired
15. __ Certified Copy of Priority Document(s) (if foreign priority is claimed)
16. X Other: _____
   Express Certificate of Mailing
   Declaration (unsigned)

17. **If a CONTINUING APPLICATION,** check appropriate box and supply the requisite information:
   ___ Continuation ____ Divisional ____ Continuation-in-part (CIP)
   of prior application No: _

18. **Correspondence Address**

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APPLICATION FOR UNITED STATES LETTERS PATENT

for

SYSTEM AND METHOD FOR INSERTION OF RECORDED MEDIA INTO A BROADCAST

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Attorney's Docket No.: 04688.P021

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SYSTEM AND METHOD FOR INSERTION OF RECORDED MEDIA INTO A BROADCAST

FIELD OF THE INVENTION

The present invention relates generally to broadcast systems and, more particularly, to a system and method for inserting recorded media into a broadcast.

BACKGROUND OF THE INVENTION

There are numerous technologies available for inserting media into broadcast systems. For instance, public announcements generated as text may be added to a video broadcast signal (e.g., to notify viewers of technical difficulties, critical events, weather alerts, etc.). The scheduled program continues uninterrupted while an announcement text is displayed on the television screen. It is also possible to receive notification of a private event (such as receiving an e-mail) through a television screen. Notification may be generated as text and displayed on the television screen or may take the form of a recorded audio announcement.

More particularly, in recent years the development of Germany's *Verkehrsfunk* (known broadly in Europe) has allowed people who listen to tapes or CD's to receive important announcements, generally relating to traffic information, without having to continually listen to a specific station just because it happens to periodically announce traffic information for the area. The system makes it possible, by means such as a simple tone decoder, to turn on and off the audio insert. However, *Verkehrsfunk* has some limitations. For one, the announcement interruption always takes precedence over the play of the recorded medium. The system is often so simplistic that the recording does

not even pause, but rather continues to play unheard while the announcement is spoken. The listener thus misses part of the recording. Moreover, the system uses a simple switch-over of the source selector of the amplifier, so the medium of the announcement and the medium of the recording (in this case, both audio) must be identical.

In addition, the event driving the switch-over happens in real time. That is, the signal arrives and the event itself creates the signal. For example, when the speaker starts to make a traffic information announcement he pushes a button that turns on a first pilot tone and at the end of the announcement he pushes another button that creates an end pilot tone.

In essence, to date the insertion of media into broadcast systems interrupts the broadcast stream. Moreover, prior systems are inefficient in that they require the user's medium of choice and the medium of the insertion to be of the same type.

SUMMARY OF THE INVENTION

The present invention provides a system and method for prioritizing the insertion of recorded media into a broadcast stream according to a comparison of priority indicators in the broadcast stream and in the recorded media insertion. One embodiment provides a recorded media insertion that may be multi-media in nature.

According to one embodiment, a broadcast stream is transmitted and received. At some point in time, an event occurs which requires the insertion of recorded media. If the recorded media insertion is a low priority the insertion may be delayed until the system determines that it will cause the least amount of disturbance. If the recorded media insertion is a high priority, it may be inserted immediately into the broadcast stream. In one embodiment, priority indicators may range between "0," the highest priority, and "n," the lowest priority. There may be a varying number of levels between 0 and n, or only one level.

In one embodiment, a signal that is needed to change the priority of the event may be programmed by a time mark to synchronize with the broadcast stream. The signal may be included in the broadcast stream as a pilot tone or by watermarking video, audio, or other media or data transmitted. The signal may also be transmitted over a separate network, again with a time mark to synchronize with the broadcast stream. In addition, if the watermark relates to video it may also contain an area in which an overlay may be played. Once the recorded media insertion has either finished by running its length or the priority level has been changed by sending another watermark, the system returns to its original broadcast-only type performance.

In yet another alternative embodiment, the user's medium and the medium of the recorded insertion do not have to be of the same type (i.e., one could be video and the other could be audio, both could be video, or one could be video without audio and the other could be audio/video, etc.).

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BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a block diagram illustrating a prior art system for inserting an audio announcement over a radio system by interrupting the play of a cassette or CD.

Figure 2 is a block diagram illustrating inserting recorded media into a broadcast stream in a television system in accordance with one embodiment of the present invention.

Figure 3 is a flow chart describing the steps of comparing the priority indicators of a recorded media insertion with the priority indicators of a broadcast stream in accordance with one embodiment of the present invention.

Figure 4 is a flow chart describing the steps of an Insertion Analyzer comparing the priority indicators of a broadcast stream the with priority indicators of multiple recorded media insertions in accordance with one embodiment.

Figure 5 is a block diagram of a computer system in accordance with one embodiment of the present invention.

DETAILED DESCRIPTION

Described herein is a system and method for inserting recorded media into a broadcast stream. Throughout the following description specific details are set forth in order to provide a more thorough understanding of the invention. However, the invention may be practiced without these particulars. In other instances, well known elements have not been shown or described in detail to avoid unnecessarily obscuring the present invention. Accordingly, the specification and drawings are to be regarded in an illustrative, rather than a restrictive, sense.

One limitation of prior art techniques for media insertion into broadcast systems is that the insertion takes precedence over the play of the recorded medium. In cases where an announcement interrupts a recording, the listener misses part of the recording. It would be helpful if a system for media insertion into broadcast systems existed to prioritize the insertion according to priority indicators, such that the insertion may be delayed if it is a low priority and transmitted if it is a high priority. For example, if a user has been closely following a game show for nearly an hour and the answer to the million-dollar question finally arrives only to be obliterated by the voice-over "You've got mail," the user may be frustrated and upset. However, if a system existed to give the million-dollar answer a high priority level, the message "You've got mail" would have to wait until a low priority section of the broadcast stream.

Another limitation of prior art techniques for media insertion into broadcast systems is that the medium of the announcement and the user's medium typically need to be identical (i.e., audio and audio, video and video, etc.). It would be helpful if a system existed for the insertion of multi-media into a broadcast system.

The system and method disclosed herein may be integrated into advanced Internet-or network-based knowledge systems as related to information retrieval, information extraction, and question and answer systems. Figure 5 is an example of one embodiment of a computer system 500. The system shown has a processor 501 coupled to a bus 502. Also shown coupled to the bus 502 are a memory 503 which may contain instructions 504 such as instructions for inserting media into a broadcast stream. Additional components shown coupled to the bus 502 are a storage device 505 (such as a hard drive, floppy drive, CD-ROM, DVD-ROM, etc.), an input device 506 (such as a keyboard, mouse, light pen, bar code reader, scanner, microphone, joystick, etc.), and an output device 507 (such as a printer, monitor, speakers, etc.). Of course, an exemplary computer system could have more components than these or a subset of the components listed.

The system and method described herein may be stored in the memory of a computer system (i.e., a set-top box) as a set of instructions to be executed, as shown by way of example in Figure 5. In addition, the instructions to perform the system and method described herein may alternatively be stored on other forms of machine-readable media, including magnetic and optical disks. For example, the system and method of the present invention may be stored on machine-readable media, such as magnetic disks or optical disks, which are accessible via a disk drive (or computer-readable medium drive). Further, the instructions may be downloaded into a computing device over a data network in a form of a compiled and linked version.

Alternatively, the logic to perform the system and method described herein may be implemented in additional computer and/or machine-readable media such as discrete

hardware components as large-scale integrated circuits (LSI's), application specific integrated circuits (ASIC's), firmware such as electrically erasable programmable read-only memory (EEPROM's), and electrical, optical, acoustical, and other forms of propogated signals (e.g., carrier waves, infrared signals, digital signals, etc.).

Referring now to Figure 1 there is shown a block diagram illustrating inserting an audio announcement over a radio system 100 by interrupting the play of a cassette or CD. The stream of recording 101 may be a CD player, a cassette player, or any other device capable of reproducing audible sound from a recorded medium. The stream of recording 101 is part of a radio system 100 including an AM/FM receiver (not shown in this view), a tuner for tuning to a radio station (not shown in this view), one or more speakers (not shown in this view) and various other components well known to those skilled in the art of audio systems. Announcement 111 may be received by an unused tuner in the radio system 100 that is playing the music and may contain signal tones such as tones 112 and 116. When signal tones 112 and 116 turn on the announcement system, arrow 113 indicates that recorded medium is suspended at point 114. The announcement between the tones 115 can then be heard by the listener, because it is inserted as indicated by arrow 120. At the end of the announcement, tone 116 then switches play back to the recorded medium, which event is marked at point 118, and the remainder of the recording continues to play on track 101. According to the illustration of Figure 1, the announcement interruption takes precedence over the play of the recorded medium. Moreover, the medium of the announcement and the medium of the recording (in this case both audio) need to be identical.

Referring now to Figure 2 there is shown a block diagram illustrating inserting recorded media into a broadcast stream in a television system 200 in accordance with one embodiment. The present invention may be implemented in any television system 200 including analog (e.g., using CRTs technology) as well as digital technologies (e.g., HDTV supporting interlaced format). It should be noted, however, that although television system 200 is used in the embodiment illustrated in Figure 2, any system capable of receiving broadcast stream 202 may be used, including radio systems. Television system 200 typically includes a receiver for receiving a broadcast signal, a display screen, a tuner for extracting a television signal corresponding to a channel, and other standard components well known to those skilled in the art of television systems.

In the embodiment illustrated in Figure 2, television system 200 also includes a set-top box (not shown in this view). The set-top box is generally a user interface unit comprising a CPU coupled to a read-only memory (ROM) and a random-access memory (RAM)(not shown in this view). The ROM includes instructions and data for executing on the CPU. The RAM is used for storing program variables for the program instructions contained in the ROM. The set-top box of the present invention also contains executable code, typically in software, for determining at what point to insert recorded media 213 into a broadcast stream 202 based on a comparison of priority indicators 240 in the recorded media insertion 213 and in the broadcast stream 202 in a manner that will be described in detail below.

According to the embodiment illustrated in Figure 2, set-top box receives the broadcast stream 202 transmitted from a broadcast station 201 and delivers the broadcast stream 202 in real-time usable form to the receiver (not shown in this view) in the

television system 200. At some point in time event 212 occurs, which requires the insertion of the recorded media 213 into the broadcast stream 202. The media may be a recorded announcement, overlay, text, video, or any other type of available media. The event 212 which triggers the recorded media insertion 213 into the broadcast stream 202 may be a variety of events, such as notification to a user of the television system 200 that an e-mail message has arrived, information regarding traffic or weather conditions, the state of the stock market, sports updates, etc. The recorded media insertion 213 and the broadcast stream 202 are assigned priority indicators 240 ranging between "0," the highest priority, and "n," the lowest priority. There may be any number of levels between 0 and n, or only one level. Of course, priority indicators 240 do not necessarily have to range between 0 and n. In another embodiment, for instance, priority indicators 240 may range from "1" through "9," "A" through "Z," or may even be symbols such as "*" for the highest priority and "-" for the lowest priority. Priority indicators 240 may be embedded into the broadcast stream 202 according to numerous known technologies, including a pilot tone or by watermarking either video, audio, or other media or data transmitted. A signal (not shown in this view) that is needed to change the priority indicators 240 may be programmed by a time mark. In this way, the recorded media insertion 213 synchronizes with the broadcast stream 202. It should also be noted that it is possible to use existing transport streams (such as the transport streams in digital television broadcasts) to embed the priority indicators 240 into the broadcast stream 202.

In a further aspect, the priority indicators 240 of various components of the broadcast stream 202 may be annotated by a broadcaster. For instance, the broadcaster may assign different priority indicators 240 to various segments of a newscast, such as

priority indicator 0 to the actual program and priority indicator n to the commercials. Advertisers could also use the system for low-level local advertising during the newscast (or other program), for example, by allowing an advertiser to address just one subdivision of a population group or some geographic area located close to a specific store or service place. This kind of micro-advertising would allow broadcasters to sell inexpensive local advertising to businesses, which otherwise would not have a chance to get onto a major channel during prime-time. It is also possible for the user to assign priority indicators 240 to the recorded media insertion 213. For instance, the user may determine that all e-mail notifications from family members receive priority indicator 0 and all e-mail notifications from friends receive priority indicator n. The user may set for each level and each media type an ignore or a higher level to replace the broadcast stream, thus allowing the user to customize the experience.

In a further aspect of the present invention, priority indicators 240 in the broadcast stream 202 may be transmitted over a separate network (e.g., the Internet) (not shown in this view). In this embodiment, set-top box is connected to a server (not shown in this view) through the separate network. The server receives the priority indictor 240 of the broadcast stream 202 through the separate network and transmits the priority indicator 240 to the set-top box, rather than having the priority indicators 240 be embedded into the broadcast stream 202 through a watermark or some other method. In addition, the recorded media insertion 213 may either be transmitted in advance, using the same transport as is used by the program information, or may be transmitted over the separate network.

When watermark 220 arrives, vector 221 changes the priority indicator 240 at point 241 to level 1, which in turn releases a prerecorded announcement 242 for play by sending command 222 and suspending the replay or reducing the replay of the broadcast stream 202. Prerecorded announcement 242 is then inserted or overlaid, depending again on the medium type and the announcement content. Prerecorded announcement 242 may be, for example, a voice-over such as "You've got mail," that plays during a speaking pause in the program or it may be an overlay in the background of a video such as "Order your movie tickets now -- Click here," generated as text and displayed on the television screen. Once the recorded media insertion 213 has either finished by running its length or the priority indicator 240 has been changed by sending a second watermark 225, the television system 200 returns to its original broadcast-only type performance as indicated by arrows 226, 227, and 242 a through n. The earlier event 242a indicates that the media insertion 213 has stopped before the second watermark 225 is sent.

Non-conventional media may also be used. For example, odor media, not currently available, may be used to allow broadcasters to combine smells in broadcasts. Odor media may be used to advertise products (such as perfume, for instance, or pizza), to notify a user that their restaurant take-out meal is available, or in any other capacity where the release of an odor may be helpful. Also, the recorded media insertion 213 may be multi-media in nature. Depending on the required interrupt priority indicator 240, some recorded media insertion 213 may be played, while others may be held back. For example, "You've got mail" may be both a video clip and a sound file. Depending on the current priority indicator 240 of the broadcast stream 202 and on the priority indicator 240 assigned to the recorded media insertion 213, for example, only the sound or only the

video would play, rather than both or none. Also, if there is no break in the priority of interrupt requests, a queue of recorded media insertions 213 may build, which eventually may be played, one at a time, or in a multiple view screen, showing all the icons/media at the same time, based on user requests.

In addition, all kinds of variations may be used for the user configurations and broadcast inserts as well as for the recordings, and all kinds of compression techniques, bitmapping techniques, 3-D texture mapping, etc.

Referring now to Figure 3, there is shown a flow chart illustrating executing code to compare the priority indicator of a recorded media insertion with the priority indicator in a broadcast stream 300 in accordance with one embodiment. Broadcast stream 310 (e.g., a TV program) in any time frame has an assigned priority indicator A and recorded media insertion 320 has an assigned priority indicator B. Both priority indicator A and priority indicator B are functions of time A(t) and B(t). The executing code 330 compares A(t) and B(t) (processing block 340). If A(t) is greater than B(t) then the broadcast stream is not interrupted. Otherwise, an additional recorded media insertion 350 is superimposed on the broadcast stream.

Referring now to Figure 4, there is shown a flow chart of the steps for comparing priority indicators of a broadcast stream with priority indicators of multiple recorded media insertions 400 in accordance with one embodiment. One or more events 401 that require media insertions into a broadcast stream 402 trigger the initiation of the routine 400 (for example, through an interrupt as is well known in the art). At processing block 403 priority indicators for events 401 that trigger media insertions are called up. For instance, e-mail notifications may have a low priority indicator and phone call

notifications may have a high priority indicator. Priority indicators of the media insertions are decoded as are the priority indicators of the broadcast stream 402 (processing block 404).

The routine 400 applies filter criteria (processing block 405) where a user may set their own preferences for events 401 triggering the media insertions (processing block 405). For instance, the user may give the highest priority indicator to media insertions for an event caused by a particular person causing the event (for instance, the highest priority indicator may be given to all e-mail notifications and phone call notifications from a user's spouse). At processing block 406 the routine 400 sorts media insertions by priority indicators, such that media insertions go through a loop (processing blocks 407 and 408). The loop compares the priority indicators of multiple media insertions against the priority indicators of the broadcast stream 402. The loop allows for media insertions into the broadcast stream 402 until an event with a media insertion with a lower priority than the broadcast stream 402 appears. The system 400 sorts (processing block 406) the media insertions by placing media insertions with the highest priority first. When all the media insertions have played, the routine interrupts (processing block 430) and a CPU (not shown in this view) that contains routine 400 returns to its original function.

Thus, a system and method for inserting recorded media into a broadcast stream has been described. Although the foregoing description and accompanying figures discuss and illustrate specific embodiments, it should be appreciated that the present invention is to be measured only in terms of the claims that follow.

CLAIMS

What is claimed is:

1. A system, comprising

a receiver to receive a broadcast stream and recorded media; and

a unit to compare a priority indicator in the broadcast stream and a priority indicator in the recorded media, the unit permitting insertion of the recorded media into the broadcast stream when the priority indicators in the recorded media are higher than in the broadcast stream and delaying insertion when the priority indicators in the recorded media are lower than in the broadcast stream.

2. The system of Claim 1 wherein the priority indicators are numbers, letters, or symbols in the broadcast stream and in the recorded media.

3. The system of Claim 1 wherein the recorded media and the broadcast stream are the same media.

4. The system of Claim 1 wherein the recorded media and the broadcast stream are different media.

5. The system of Claim 1 wherein an event triggers the recorded media insertion into the broadcast stream.

6. The system of Claim 5 wherein the event that triggers the recorded media insertion into the broadcast stream includes notification that an e-mail message has arrived.

7. The system of Claim 1 wherein a signal that is needed to change the priority indicator of the media insertion is programmed by a time mark, the time mark synchronizing the recorded media insertion with the broadcast stream.

8. The system of Claim 1 wherein the priority indicators are embedded into the broadcast stream using a pilot tone or watermark.

9. The system of Claim 1 wherein the priority indicators are assigned to the recorded media insertions by a user of the system.

10. The system of Claim 1 wherein the receiver is part of a television system or radio system.

11. A method of inserting recorded media into a broadcast stream, the method comprising:

transmitting a broadcast stream and recorded media to a receiver of a broadcast system, the broadcast stream and the recorded media containing one or more priority indicators;

comparing priority indicators in the broadcast stream with priority indicators in the recorded media; and

inserting the recorded media into the broadcast stream when the priority indicators in the recorded media are higher than in the broadcast stream and delaying inserting the recorded media into the broadcast stream when the priority indicators in the recorded media are lower than in the broadcast stream.

12. The method of Claim 11 wherein the priority indicators are numbers, letters, or symbols in the broadcast stream and in the recorded media.

13. The method of Claim 11 wherein the recorded media and the broadcast stream are the same media.

14. The method of Claim 11 wherein the recorded media and the broadcast stream are different media.

15. The method of Claim 11 wherein an event triggers the recorded media insertion into the broadcast stream.

16. The method of Claim 15 wherein the event that triggers the recorded media insertion into the broadcast stream includes notification that an e-mail message has arrived.

17. The method of Claim 11 wherein a broadcaster may assign a plurality of priority indicators to different segments of a broadcast stream, the priority indicators embedded into the broadcast stream using a pilot tone or watermark.

18. The method of Claim 11 wherein a broadcaster may assign a plurality of priority indicators to different segments of a broadcast stream based on a subdivision or geographic area, the plurality of priority indicators allowing broadcasters to sell advertising space for the particular subdivision or geographic area.

19. The method of Claim 11 wherein a signal used to change the priority indicator of the media insertion is programmed by a time mark, the time mark synchronizing the recorded media insertion with the broadcast stream.

20. A system, comprising:

a server;

a set-top box coupled to the server;

a receiver in the set-top box to receive a broadcast stream and recorded media;

a transmitter in the receiver to transmit the broadcast stream and the recorded media to a television receiver; and

a unit in the set-top box to compare one or more priority indicators in the broadcast stream and in the recorded media, the unit permitting insertion of the recorded media into the broadcast stream when the priority indicators in the recorded media are higher than in the broadcast stream and delaying insertion when the priority indicators in the recorded media are lower than in the broadcast stream.

21. The system of Claim 20 wherein the priority indicators are numbers, letters, or symbols in the broadcast stream and in the recorded media.

22. The system of Claim 20 wherein the recorded media and the broadcast stream are the same media.

23. The system of Claim 20 wherein the recorded media and the broadcast stream are different media.

24. The system of Claim 20 wherein an event triggers the recorded media insertion into the broadcast stream.

25. The system of Claim 24 wherein the event that triggers the recorded media insertion into the broadcast stream includes notification that an e-mail message has arrived.

26. A machine-readable storage medium tangibly embodying a sequence of instructions executable by the machine to perform a method for inserting recorded media into a broadcast stream, the method comprising:

transmitting a broadcast stream and recorded media to a receiver of a broadcast system, the broadcast stream and the recorded media containing one or more priority indicators;

comparing priority indicators in the broadcast stream with priority indicators in the broadcast media; and

inserting the recorded media into the broadcast stream when the priority indicators in the recorded media are higher than in the broadcast stream and delaying inserting the recorded media into the broadcast stream when the priority indicators in the recorded media are lower than in the broadcast stream.

27. The machine-readable storage medium of Claim 26 wherein the priority indicators are numbers, letters, or symbols in the broadcast stream and in the recorded media.

28. The machine-readable storage medium of Claim 26 wherein the recorded media and the broadcast stream are the same media.

29. The machine-readable storage medium of Claim 26 wherein the recorded media and the broadcast stream are different media.

30. The machine-readable storage medium of Claim 26 wherein an event triggers the recorded media insertion into the broadcast stream.

31. The machine-readable storage medium of Claim 30 wherein the event that triggers the recorded media insertion into the broadcast stream includes notification that an e-mail message has arrived.

32. The machine-readable storage medium of Claim 26 wherein a broadcaster may assign a plurality of priority indicators to different segments of a broadcast stream, the priority indicators embedded into the broadcast stream using a pilot tone or watermark.

33. The machine-readable storage medium of Claim 26 wherein a broadcaster may assign a plurality of priority indicators to different segments of a broadcast stream based on a subdivision or geographic area, the plurality of priority indicators allowing broadcasters to sell advertising space for the particular subdivision or geographic area.

34. The machine-readable storage medium of Claim 26 wherein the priority indicators are assigned to the recorded media insertions by a user of the system.

35. The machine-readable storage medium of Claim 26 wherein a signal used to change the priority indicator of the media insertion is programmed by a time mark, the time mark synchronizing the recorded media insertion with the broadcast stream.

Docket No. 95-1

ABSTRACT

A system and method for prioritizing the insertion of recorded media into a broadcast stream according to a comparison of priority indicators in the broadcast stream and in the recorded media insertion. The recorded media insertion may be multi-media in nature.

Attorney Docket No. 57454.8000

DOE160"497T960

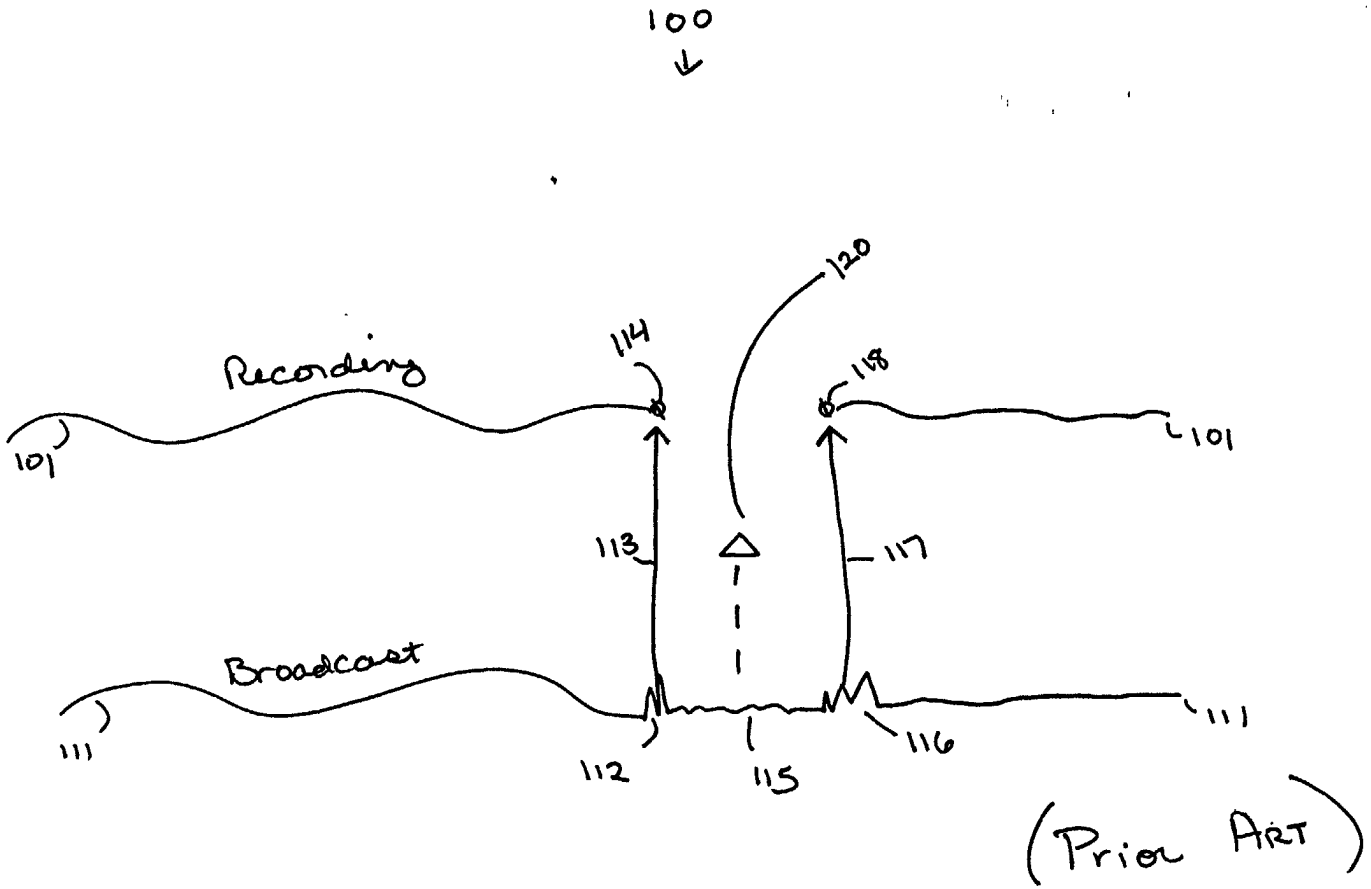

Figure 1

DOE760"4ST9960

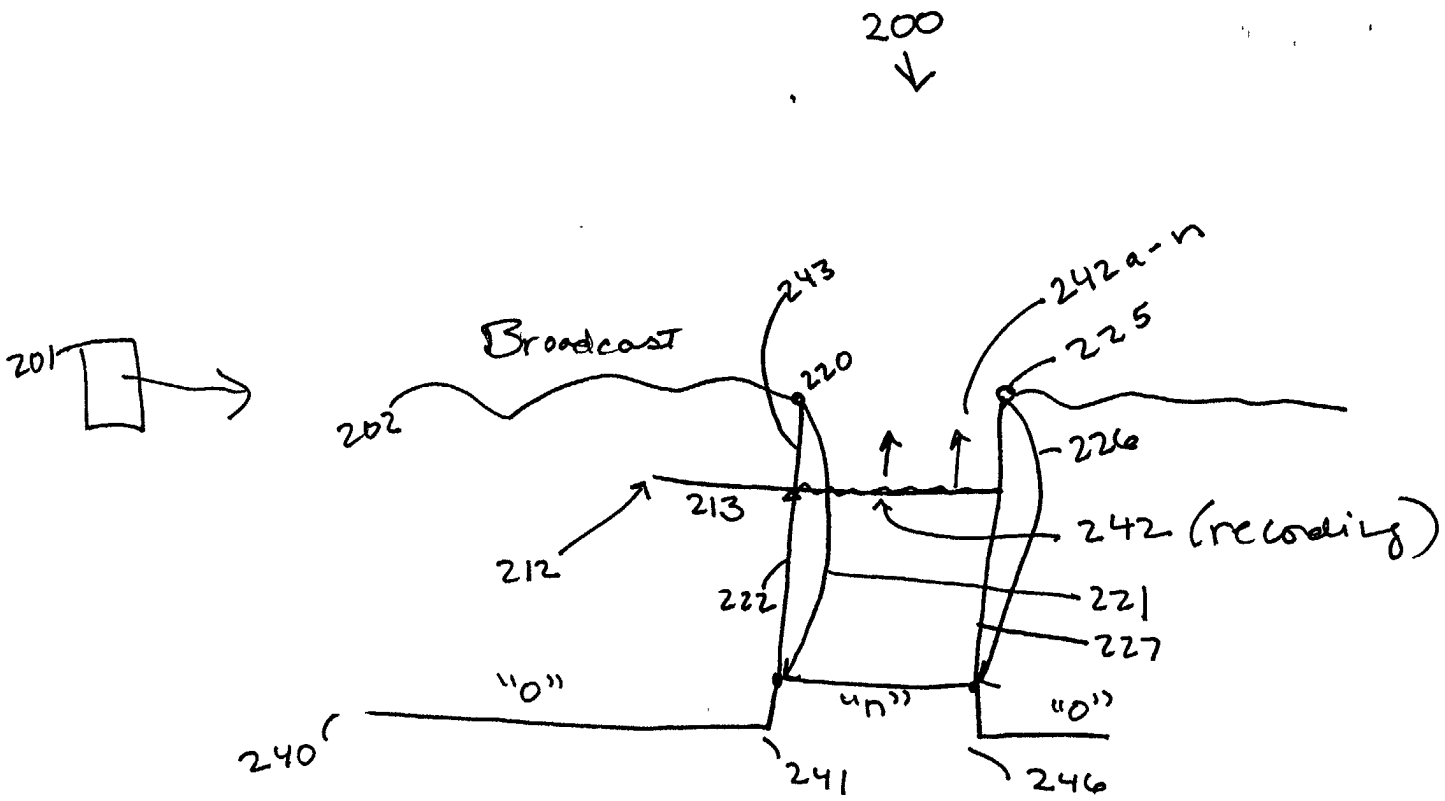

Figure 2

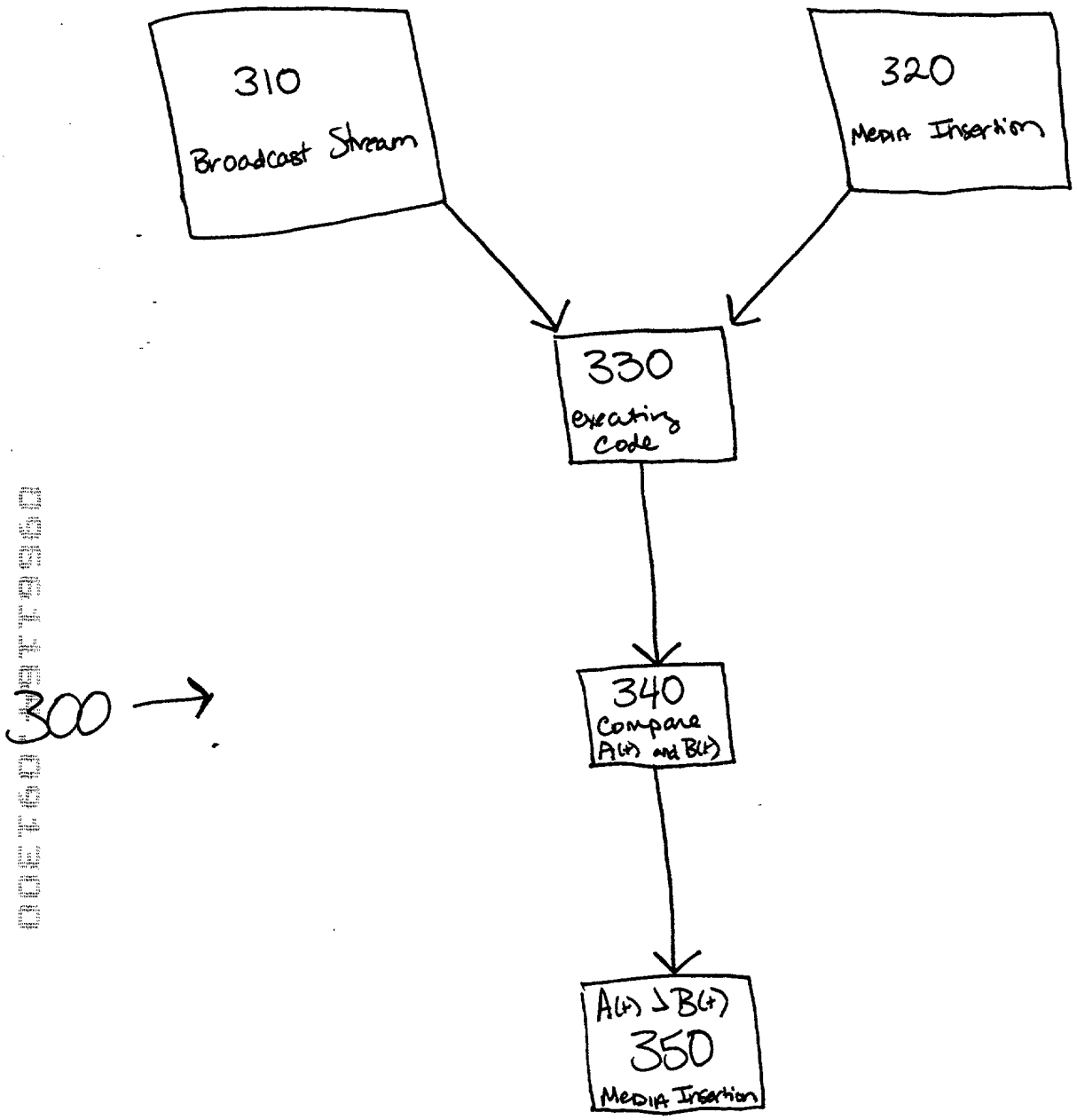
310
Broadcast Stream
320
Media Insertion
330
executing code
340
Compare A(t) and B(t)
A(t) ≠ B(t)
350
Media Insertion
300

Figure 3

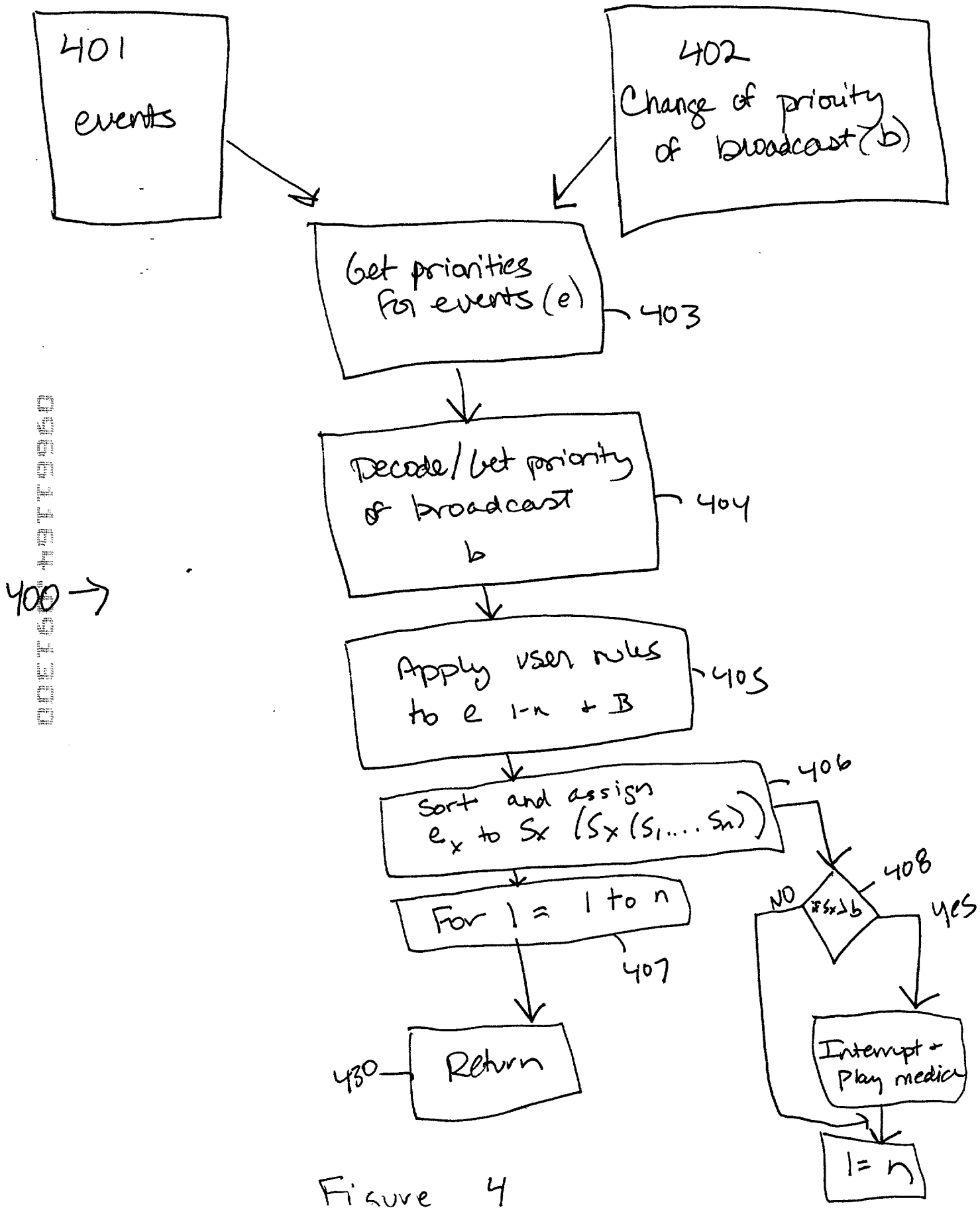
401
events
402
Change of priority of broadcast (b)
Get priorities for events (e)
403
Decode/Get priority of broadcast b
404
400
Apply user rules to e 1-n + B
405
Sort and assign e_x to S_x (S_x (S_1 .... S_n))
406
For 1 = 1 to n
407
408
NO
if S_x > b
yes
Interrupt + Play media
1 = n
430
Return

Figure 4

08E760"+9TT9960

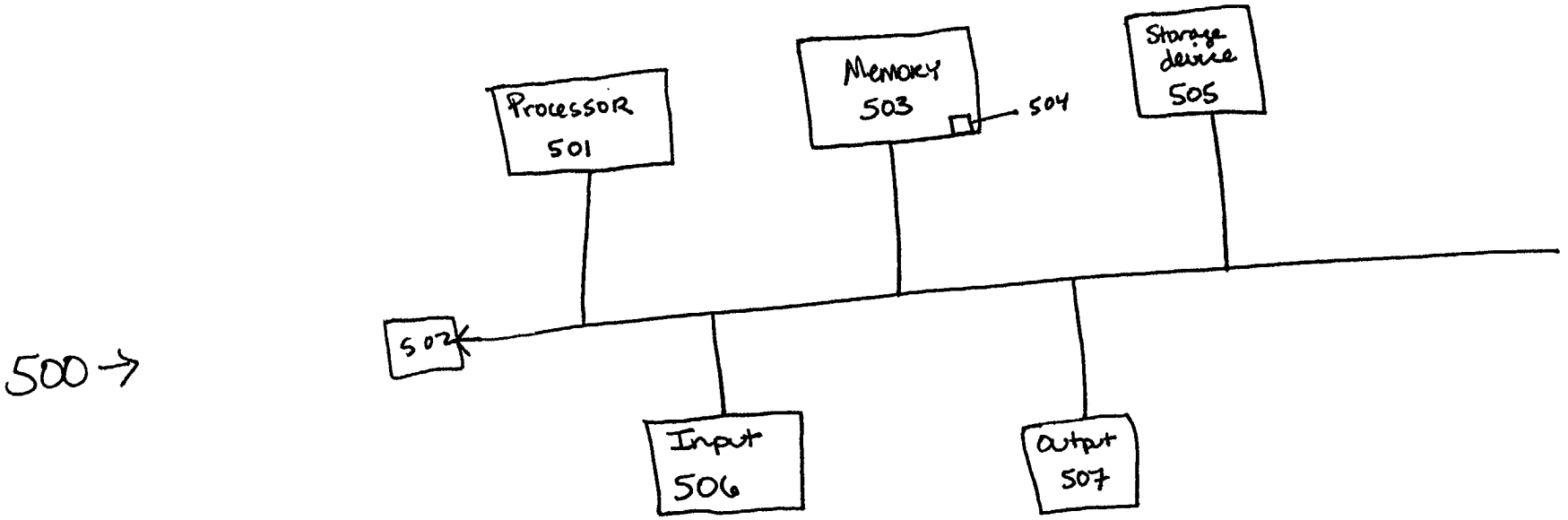

Figure 5

Attorney's Docket No.: 004688.P021 Patent

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below, next to my name.

I believe I am the original, first, and sole inventor (if only one name is listed below) or an original, first, and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Dan Kikinis and Yakov Kamen

the specification of which

_X_ is attached hereto.

___ was filed on _____ as
United States Application Number _____
or PCT International Application Number _____
and was amended on _____.
(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claim(s), as amended by any amendment referred to above. I do not know and do not believe that the claimed invention was ever known or used in the United States of America before my invention thereof, or patented or described in any printed publication in any country before my invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, and that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months (for a utility patent application) or six months (for a design patent application) prior to this application.

I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d), of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

(Number)	(Country)	(Day/Month/Year Filed)	Priority Claimed	
			Yes	No
			Yes	No
			Yes	No

I hereby claim the benefit under title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below:

(Application Number)	Filing Date

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Number)	Filing Date	(Status -- patented, pending, abandoned)

I hereby appoint the persons listed on Appendix A hereto (which is incorporated by reference and a part of this document) as my respective patent attorneys and patent agents, with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith.

Send correspondence to John P. Ward (Name of Attorney or Agent), BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP, 12400 Wilshire Boulevard 7th Floor, Los Angeles, California 90025 and direct telephone calls to John P. Ward (Name of Attorney or Agent), (408) 720-8300.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Sole/First Inventor Dan Kikinis

Inventor's Signature _____ Date _____

Residence Saratoga, California (City, State) Citizenship _____ (Country)

Post Office Address _____

Full Name of Second/Joint Inventor Yakov Kamen

Inventor's Signature _____ Date _____

Residence Cupertino, California (City, State) Citizenship _____ (Country)

Post Office Address _____

Full Name of Third/Joint Inventor _____

Inventor's Signature _____ Date _____

Residence _____ (City, State) Citizenship _____ (Country)

Post Office Address _____

Full Name of Fourth/Joint Inventor _____

Inventor's Signature _____ Date _____

Residence _____ (City, State) Citizenship _____ (Country)

Post Office Address _____

Docket No. 95-1-95.0

APPENDIX A

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Docket No. P9171.00

APPENDIX B

Title 37, Code of Federal Regulations, Section 1.56
Duty to Disclose Information Material to Patentability

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclosure information exists with respect to each pending claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is cancelled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclosure all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

(1) Prior art cited in search reports of a foreign patent office in a counterpart application, and

(2) The closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made or record in the application, and

(1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or

(2) It refutes, or is inconsistent with, a position the applicant takes in:

(i) Opposing an argument of unpatentability relied on by the Office, or

(ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

(1) Each inventor named in the application;

(2) Each attorney or agent who prepares or prosecutes the application; and

(3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.